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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,692	08/30/2001	Yotaro Hatamura	2001_1227	7051

7590 02/13/2003

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EXAMINER
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OLSEN, ALLAN W

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 02/13/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/941,692

Applicant(s)

HATAMURA ET AL.

Examiner

Allan W. Olsen

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 August 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

Claim 35 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel or amend the claim to place it in proper dependent form. Claim 35 is dependent upon claim 28. Each limitation of claim 35 is recited in claim 28.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

### **Recent Statutory Changes to 35 U.S.C. § 102(e)**

On November 2, 2002, President Bush signed the 21st Century Department of Justice Appropriations Authorization Act (H.R. 2215) (Pub. L. 107-273, 116 Stat. 1758 (2002)), which further amended 35 U.S.C. § 102(e), as revised by the American Inventors Protection Act of 1999 (AIPA) (Pub. L. 106-113, 113 Stat. 1501 (1999)). The revised provisions in 35 U.S.C. § 102(e) are completely retroactive and effective immediately for all applications being examined or patents being reexamined. Until all of the Office's automated systems are updated to reflect the revised statute, citation to the revised statute in Office actions is provided by this attachment. This attachment also substitutes for any citation of the text of 35 U.S.C. § 102(e), if made, in the attached Office action.

Art Unit: 1763

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action:

**A person shall be entitled to a patent unless –**

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 prior to the amendment by the AIPA that forms the basis for the rejections under this section made in the attached Office action:

**A person shall be entitled to a patent unless –**

**(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.**

For more information on revised 35 U.S.C. § 102(e) visit the USPTO website at [www.uspto.gov](http://www.uspto.gov) or call the Office of Patent Legal Administration at (703) 305-1622.

**Claims 22-24, 28, 29, 32-38 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 08-264511 (hereinafter, Hatakeyama '511).**

Hatakeyama '511 teaches a method in which a fast atom beam is used to pattern a surface. Hatakeyama '511 teaches placing a micro dimensioned shielding mask between the beam source and the surface to be patterned. Hatakeyama '511 teaches that the method can be used to create reduce the friction between a magnetic disk and magnetic head. Hatakeyama '511 teaches that fast atom beam may impinge normal to the surface. Hatakeyama '511 teaches the contouring is very anisotropic due to highly directional nature of the particle beam. Hatakeyama '511 teaches that the fast atom beam source and the surface to be contoured can be rotated with respect to one another. Hatakeyama '511 teaches that the surface to be contoured can comprise an electrically insulating layer such as SiO<sub>2</sub> or may be nickel plated. See paragraphs: 0002, 0010, 0024, 0034, 0044, 0047, 0050, 0074, 0076, 0078.

**Claims 19-29, 34-39 and 44-49 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 08-257781 (hereinafter, Hatakeyama '781). See paragraphs: 0012, 0013, 0018, 0019, 0022, 0023, 0026, 0029, 0031.**

Hatakeyama '781 teaches a method in which a fast atom beam is used to pattern a surface. Hatakeyama '781 teaches placing a micro dimensioned shielding mask comprising a plurality of fine wire or rods between the beam source and the surface to be patterned. Hatakeyama '781 teaches that the method can be used to create reduce the friction between a magnetic disk and magnetic head. Hatakeyama '781 teaches that fast atom beam may impinge normal to the surface. Hatakeyama '781 teaches the contouring is very anisotropic due to highly directional nature of the particle beam.

Hatakeyama '781 teaches that the fast atom beam source and the surface to be contoured can be rotated with respect to one another. Hatakeyama '781 teaches that the surface to be contoured can comprise an electrically insulating layer such as SiO<sub>2</sub> or may be nickel plated. See paragraphs: 0002, 0010, 0024, 0034, 0044, 0047, 0050, 0074, 0076, 0078.

**Claims 19-29, 32-39 and 42-49 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 5,868,952 issued to Hatakeyama et al. (hereinafter, Hatakeyama '952).**

Hatakeyama '952 teaches a method in which a fast atom beam is used to pattern a surface. Hatakeyama '952 teaches that micro dimensioned objects, such as fine wires or rods, can function as screening masks by dispersing the objects on or above the surface to be patterned. Hatakeyama '952 teaches that the method can be used to create reduce the friction between a magnetic disk and magnetic head. Hatakeyama '952 teaches that fast atom beam may impinge normal to the surface. Hatakeyama '952 teaches the contouring is very anisotropic due to highly directional nature of the particle beam. Hatakeyama '952 teaches that the fast atom beam source and the surface to be contoured can be rotated with respect to one another. Hatakeyama '952 teaches that the surface to be contoured can comprise an electrically insulating layer such as SiO<sub>2</sub> or may be nickel plated. See paragraphs: col. 2, lines 23-32, 62-65; col. 4, lines 6-11; col. 11, lines 28-29; col. 11, lines 40 -50; col. 12, lines 15-30; col. 19, lines 44-53; col. 20, lines 26-40; col. 23, lines 30-38; col. 29, line 40 - col. 30, line 3.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over each Hatakeyama reference as applied to claim 29 in the above 102 rejections (Hatakeyama '511, Hatakeyama '781 and Hatakeyama '952) in view of U.S. Patent 5,303,100 issued to Nakayama et al. (hereinafter, Nakayama).**

While these references teach contouring the surface of a slider to lower the friction between the slider and a disc, they do not teach specifically which layer of the slider is contoured. Therefore, they do not teach contouring a carbon, ceramic or SiO<sub>2</sub> layer that protects an underlying magnetic layer.

Nakayama teaches that contouring a carbon or ceramic protection layer lower the friction between the slider and disc.

It would have been obvious to one skilled in the art to use Hatakeyama's method to contour the layer of carbon or ceramic layer that protects an underlying magnetic layer because Hatakeyama teaches using the method to contour surfaces of sliders so as to reduce the friction between the slider and a disc and Hatakeyama's method may be used to contour carbon, SiO<sub>2</sub> and ceramic surfaces, and Nakayama teaches that the friction between a slider and a disc may be reduced by contouring the protective carbon or ceramic layer.

**Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatakeyama '781, as applied to claim 39 in the above 102 rejection, in view of JP 08-238426 (hereinafter, Hatakeyama '426).**

Hatakeyama '781 does not teach using micro-particle shielding mask.

Hatakeyama '426 teaches using a micro-particle shielding mask

It would have been obvious to one skilled in the art to use a micro-particle shielding mask because Hatakeyama '426 teaches that this enables one to achieve excellent distribution of the masking agent across the surface to be contoured.

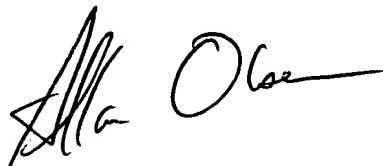
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is 703-306-9075. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck, can be reached on 703-308-2333.

The general fax numbers for TC1700 are 703-872-9310 (non-after finals) and 703-872-9311(after-final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Allan Olsen, Ph.D.  
February 10, 2003

A handwritten signature in black ink, appearing to read 'Allan Olsen', is written over the typed name and date.